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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,658	05/05/2005	Niket Keshav Patwardhan		1380

7590
Niket Patwardhan
P.O. Box 1240
Bellevue, WA 98009

EXAMINER

CHAN, SAI MING

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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10/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/533,658

Applicant(s)

PATWARDHAN, NIKET KESHAV

Examiner

Sai-Ming Chan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating

obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Agee et al. (U.S. Patent Publication # 20020122465)**, in view of **Murai (U.S. Patent # 5966377)**.

Consider **claim 1, Agee et al.** clearly disclose and show a mechanism to simultaneously transmit multiple messages in a digital broadcast system, comprising; a multiplexor (paragraph 19 (multiplexed signals)) to combine one or more bits from multiple messages (fig. 53; paragraph 111(interleaved elements)) into a digital symbol (paragraph 20(bits are grouped together to form symbols)), so each symbol has bits from multiple messages (fig. 53; paragraph 111(interleaved elements)); a DA converter (paragraph 555 (digital to analog converter)), that converts the digital symbol into an analog symbol (paragraph 555 (digital to analog converter)); an AD converter (paragraph 211(analog to digital converter)), that converts the analog symbol back into a digital symbol (paragraph 555 (digital to analog converter)); a demultiplexor

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(paragraph 381(demultiplexer)) that recreates each message from corresponding parts of multiple digital symbols.

However, Agee et al. do not specifically disclose separate DA converter and RF modulation.

In the same field of endeavor, Murai clearly shows separate DA converter and RF modulation (figs. 2a, 2b & 12).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a digital broadcast modulation mechanism, as taught by Agee et al, and demonstrate the separate DA and RF modulation, as taught by Marai, so that broadcast of data to a large area can be done proficiently.

Consider **claim 2**, and **as applied to claim 1 above**, Agee et al., as modified by Murai, clearly disclose and show to increase the probability of a whole message being successfully transmitted, the mechanism where the symbols transmitted by the system between the multiplexor and demultiplexor are selected from a hierarchy of non-confusable groups (paragraph 20 (two or more bits to form symbols;)); where the symbols are labelled (paragraph 20 (M possible signals)) such that each portion of the label makes a choice at a particular level of the hierarchy (paragraph 20 (one of the M signals is transmitted during each symbol period)); and each message is transmitted using only the portion of the symbol label (paragraph 20 (transmit only one value set of

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phase and amplitude)) for each symbol that makes a choice at the same level of the hierarchy.

Consider **claim 3**, and **as applied to claim 2 above**, Agee et al., as modified by Murai, clearly disclose and show that to increase the probability of a whole message being successfully transmitted; where some portions of the symbol label are deliberately left unused, acting as guard bands (paragraph 202 (guard bands)) to prevent messages using the less significant bits from interfering with messages using the more significant bits (fig. 26 (paragraph 295)).

Consider **claim 4**, and **as applied to claim 3 above**, Agee et al., as modified by Murai, clearly disclose and show that to increase the total data rate successfully transmitted; where different receivers are grouped into groups (paragraph 44 (antenna array)) with different received S/N ratios (paragraph 44 (spreading gains)); where transmissions to receivers in groups with lower S/N ratios are done by using the more significant bits (inherently taught paragraph 310 (the vector has most significant symbols and least significant symbols. If the S/N is weak, using the most significant symbols will be more efficient)) and transmissions to receivers in groups with higher S/N ratios are done by using the less significant bits (inherently taught paragraph 310 (use least significant symbols when S/N is strong)).

Consider **claim 5**, and **as applied to claim 3 above**, Agee et al., as modified by Murai, clearly disclose and show that to increase the probability of high priority

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messages being received correctly; where higher priority messages are sent using the more significant bits (inherently taught paragraph 310 (most significant symbols has higher priority than the least significant symbols)), and lower priority messages are sent using the less significant bits (inherently taught paragraph 310 (low priority should use the least significant symbols)).

Consider **claim 6**, and **as applied to claim 2 above**, Agee et al., as modified by Murai, clearly disclose and show a means; where a computer determines the channel to be used by a transmitted message (paragraph 193 (air interface)), and adds information to each message to allow an error check (paragraph 193 (error encode (e.g Reed-Solomon))) to be performed; where another computer determines whether a message was received correctly, and maintains statistics as to the error rates for each channel used to transmit messages (paragraph 245 (monitor the BER)), and periodically communicates all or some of these statistics to the first computer; and the first computer makes its selection at least partially based on the information provided by the second computer (paragraph 245 (modify spreading weights)).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Agee et al. (U.S. Patent Publication # 20020122465)**, in view of **Murai (U.S. Patent # 5966377)**, and further in view of **Weber et al. (U.S. Patent #3916095)**.

Consider **claim 7**, and **as applied to claim 2 above**, Agee et al., as modified by Murai, clearly disclose and show a method to extend the range of the system even further; where each message is transmitted within frames delineated by at least one synchronization mark (fig. 28; paragraph 297 (frame synchronization));

However, Agee et al., as modified by Murai, do not specifically disclose frames out-of-sync.

Furthermore, Weber et al. clearly shows where messages not acknowledged as being correctly received are retransmitted in the same spot of subsequent frames (column 26, lines 42-46); where messages not correctly received are added to a frame channel buffer; and where the equally significant bits of the frame channel buffer are combined to form another message (column 27, lines 24-34).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a digital broadcast modulation mechanism, as taught by Agee et al, and demonstrate out-of-sync frames, as taught by Weber et al., so that broadcast of data to a large area can be done proficiently.

Claims 8 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Agee et al. (U.S. Patent Publication # 20020122465)**, in view of **Murai (U.S. Patent # 5966377)**, and further in view of **Miyashita et al. (U.S. Patent # 6912247)**.

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Consider **claim 8**, and **as applied to claim 1 above**, Agee et al., as modified by Murai, clearly disclose and show the means as described.

However, Agee et al., as modified by Murai, do not specifically disclose D/A converter for video/graphic.

In addition, Miyashita et al. clearly shows the DA converter is a video graphics card (fig. 2a (7-1, 7-2 & 7-3 (condition-to-image-converter))); column 10, lines 29-31); and where the AD converter is a video capture card (fig. 3a (7-1-1(field-intensity-to-image converter))); column 10, lines 35-37).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a digital broadcast modulation mechanism, as taught by Agee et al, and demonstrate D/A converter and video card, as taught by Miyashita et al., so that broadcast of data to a large area can be done proficiently.

Consider **claim 9**, and **as applied to claim 8 above**, Agee et al., as modified by Murai, clearly disclose and show the means as described.

However, Agee et al., as modified by Murai, do not specifically disclose the pixels of the video.

In the same field of endeavor, Miyashita et al. clearly shows the data sent is spread over the pixels to be displayed by the video graphics card by software in the computer containing the video graphics card (fig. 30; column 24, lines 64-67; column 25, lines 1-12 (microcomputer)) so that the output signal stays within the NTSC limits

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(column 33, lines 53-62 (pixels are within the NTSC limit)); and where software in the computer containing the video capture card (fig. 4a (7-2-2); column 15, lines 47-56 (decoder)) recreates the data sent by interpolating the pixels received by the video capture card (fig. 3a (7-1-1(field-intensity-to-image converter))); column 10, lines 35-37).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a digital broadcast modulation mechanism, as taught by Agee et al, and demonstrate D/A converter and video card, as taught by Miyashita et al., so that broadcast of data to a large area can be done proficiently.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Sai-Ming Chan
S.C./sc



October 14, 2007

Seema S. Rao
10/15/07

SEEMA S. RAO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600